



State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt
Governor

Ted Stewart
Executive Director

James W. Carter
Division Director

355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203
801-538-5340
801-359-3940 (Fax)
801-538-5319 (TDD)

August 23, 1995

Greg Hawkins
Mine Manager
Brush Wellman, Incorporated
P.O. Box 815
Delta, Utah 84624

Re: Reclamation Release Request, Sigma Emma and Taurus Reclamation Treatment
Topaz Mine, M/023/003, Juab County, Utah

Dear Mr. Hawkins:

On April 10, 1995, we received your request for a release from the supplemental reclamation work performed on the Sigma Emma and Taurus reclamation treatment areas. On May 16, 1995, we visited the site and viewed the areas where the latest reclamation work had occurred. This letter will discuss how we viewed the success of those efforts and what releases will be granted and what further work will be required.

Outcome of Site Visit

Taurus Pit and Dump Area

We examined the roads, east and west side of the pit (reseeded in the winter of 1994) adjacent to the dump area, where the operator had applied topsoil, gypsum, straw and seed mix. Revegetation success was still "spotty". Some areas are doing fairly well, while other areas are not. The application of straw and horse manure was uneven and there were areas where it was visually estimated to be 8-10 inches thick. In recognition of the harsh onsite environmental conditions, the low fertility of the growth medium, and the good faith revegetation efforts made by the operator, it is our opinion that these road areas can be released. We believe that additional soil amendments and reseeded efforts will not appreciably increase the revegetative success in the near term. Numerous islands/clumps of healthy vegetation have been established and with the passage of time, these areas will expand and ultimately blend in with the vegetation density of the adjacent undisturbed area.

M/023/003

Post-It™ brand fax transmittal memo 7671		# of pages
To	Bob Pruitt	3
Co.		
Dept.		
Fax #	531-8468	
From	Lynn Kuznetsov	
Co.		
Phone #	538-5310	
Fax #		

Sigma Emma Pit and Dump Area

Similar roads in the Sigma Emma Pit and Dump area were treated with topsoil, horse manure, straw and gypsum at 150 lb/acre and then reseeded. Straw-bales were used as waterbars and placed on the Sigma Emma road on the east side of the pit. Poor grading practices which lacked sufficient surface roughness and trenches constructed parallel to the slope, have caused the outlets of the waterbars to headcut and erode severely. Because of the initial regrading problems, even the supplemental work expended in this area has shown marginal improvements.

Because of the continued severe erosion, particularly at the waterbar locations, the Sigma Emma pit road on the east side of the pit is **not** released. It is our opinion that the continued erosion problems stem from the original method of grading parallel to the slope, the overall lack of sufficient surface roughness, and a failure to prevent adjacent disturbed area drainage from entering the road. Future reclamation efforts in this area should be carefully considered prior to implementation (i.e., incorporate surface roughness and improved handling of surface drainage). In our experience, it is generally not a best management practice to use straw bales for waterbars. Normally, they are only a temporary fix, are considered non-permanent and are often difficult to install properly and maintain. A suggestion for future efforts on this road may be to remove the straw bale waterbars altogether. An attempt should be made to create a very rough, undulating surface with a track-hoe (or other suitable regrading equipment), that will prevent any significant concentration of drainage on or down the road profile. This should help stabilize the road over the long term, as well as promote increased revegetative success.

The Sigma Emma dump (tuff surface) has had two reseeded efforts. Both seeding efforts proved unsuccessful in achieving the 70% revegetation standard. Because the operator performed the dump reclamation in accordance with the approved plan, a variance from future reclamation efforts was granted by the Division.

Final Determination

Taurus Pit and Dump Area

1. The roads, east and west side of the pit (reseeded in the winter of 1994) adjacent to the dump area, where the operator had applied topsoil, gypsum, straw and seed mix are hereby released.

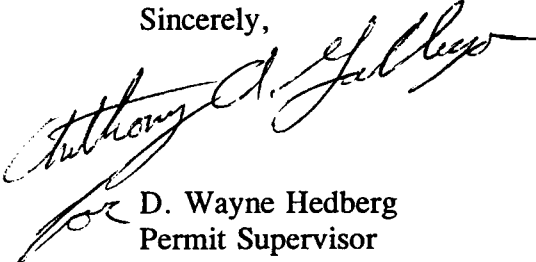
Page 3
Greg Hawkins
M/023/003
August 23, 1995

Sigma Emma Pit and Dump Area

1. The Sigma Emma pit road on the west side of the pit, that received supplemental treatment with topsoil, horse manure, straw and gypsum at 150 lb/acre, then was reseeded is also released.
2. The Sigma Emma pit road on the east side of the pit is **not** released based on the evidence of continued severe erosion, especially at waterbar locations. Supplemental reclamation efforts similar to those previously outlined in this letter will be required. Additional broadcast fertilizing and seeding will be necessary for all impacted areas following any regrading work.

We appreciate your continued cooperation and willingness to work with the Division in working out appropriate solutions to resolve these reclamation challenges. Please feel free to contact me, Tom Munson, or Lynn Kunzler of the Minerals staff should you have questions or concerns in this regard.

Sincerely,



D. Wayne Hedberg
Permit Supervisor
Minerals Regulatory Program

jb
cc: Rody Cox, Warm Springs RA, BLM
Minerals staff (route)
M023003.let